

REMARKS

STATUS

The Office Action Summary indicates acknowledgement of a claim for foreign priority and indicates that none of the priority documents have been received.

The Specification was objected-to based on issues directed to claim groups 9-20, 12-17, and 12-16.

Claims 9-14 and 20 were rejected under 35 USC 102(b) as being anticipated by Phelps (US 5,755,188).

Claims 15-18 were rejected under 35 USC 103(a) as being unpatentable over Phelps (US 5,755,188).

Claims 17 and 18 were rejected under 35 USC 103(a) as being unpatentable over Phelps, as applied to claims 9-16, in view of Garkawe (US 5,226,936).

Claim 19 was rejected under 35 USC 103(a) as being unpatentable over Phelps in view of Kohler et al. (US 5,701,850).

Claims 1-8 were previously canceled.

Claims 9, 12-17, and 19 have been amended herein.

Claims 21-23 have been added.

Claims 9-23 are presented for examination in this response.

APPLICANT'S ARGUMENTS

Foreign priority issue

The Applicant acknowledges that the Examiner is indicating priority documents have not been received and entered.

Response to Specification objections directed to claim groups 9-20, 12-17, and 12-16

With respect to claims 9-20, the Examiner asserts the term “funnel shaped side walls” which was recited in the claims, “is not what is described in the specification”. The Examiner’s assertion is unclear since the Specification uses the term “funnel-shaped side walls” in paragraphs 2, 6, 9, 11-17, 20, 23-28, and 31.

With respect to claims 12-17, and claims 12-16, the claims have amended to more directly refer to a “bottom area” or a “top area” as applicable. The amendments are applicable to the relevant dependent claims.

Response to rejection of Claims 9-14 and 20 under 35 USC 102(b) as being anticipated by Phelps (US 5,755,188).

The instant invention relates to a steam generator with a combustion chamber which has funnel-shaped side walls in its bottom area, and with an encircling wall formed from steam generator pipes welded to each other in a gas-tight manner.

Independent claim 9 has been amended to include, in relevant part, “... a center axis A, positioned at the center of the encircling wall and extending parallel to the direction of flow of the flow medium, wherein the diameter and width of the steam generator pipes is determined with respect to the steam generator pipe distance from the center axis A and with respect to the height of the funnel-shaped side walls.” This amendment is supported in the Specification at paragraphs 00030-00032 and Figures 1A, 1B, and 2. The amendments to the independent claims are applicable to the appropriate dependent claims. These amended limitations clarify that there is a relationship between the distance from the center axis A and the diameter and width of the steam generator pipes, as well as the height of the funnel-shaped side walls. This allows for more uniform heating of the steam generation pipes even at low flow medium loads or during the startup process.

The cited art of Phelps fails to anticipate or make obvious this claim limitation where Phelps is directed at determining an appropriate pipe diameter relationship between the top and bottom areas of the combustion chamber rather than in relationship to the center axis A. Further, Phelps merely seeks to use the tube centerline spacing dimensions to ensure the tube spacing matches between the tubes in the upper furnace zone and the tubes in the lower furnace zone with no regard to the relationship between the tube diameter or width with respect to center axis A (centerline), see column 4, lines 1-4.

Response to rejection of claims 15-18 under 35 USC 103(a) as being unpatentable over Phelps (US 5,755,188).

As explained above, Phelps fails to anticipate or make obvious the amended independent claim 9, which is applicable to these claims.

Response to rejection of claims 17 and 18 under 35 USC 103(a) as being unpatentable over Phelps, as applied to claims 9-16, in view of Garkawe (US 5,226,936).

As explained above, Phelps fails to anticipate or make obvious the amended independent claim 9, which is applicable to this claim.

Further, Applicant disagrees with the Examiner's assertion that the heat exchanger pipes (46) of the cyclone separator of Garkawe have smaller lower diameters than upper diameters because Garwake expressly teaches the cyclone separator is formed by a "group of continuous, spaced, constant diameter, parallel tubes ..." see column 3, lines 22-24 and see column 5, lines 13-15.

The Examiner references column 5, lines 23-30, to support the Examiner's position, however prior to the cited passage Garkawe teaches it is the width of the fins which decrease thereby giving the cyclone separator its conical shape. The decrease in fin size creates a reduced diameter in the tube segments (not in the individual tubes) wherein a tube segment is a collection of tubes connected together by the fins, see column 5, lines 15-23. As the width of the fins get smaller, the diameter the tube segments decrease, however the diameter of the individual tubes that make up the tube segment remains constant.

Response to rejection of claim 19 under 35 USC 103(a) as being unpatentable over Phelps, in view of Kohler et al. (US 5,701,850).

Independent claim 19 has been amended to include, in relevant part, "... a center axis A, positioned at the center of the encircling wall and extending parallel to the direction of flow of the flow medium, wherein the diameter and width of the steam generator pipes is determined with respect to the steam generator pipe distance from the center axis A and with respect to the height of the funnel-shaped side walls." This amendment is supported in the Specification at paragraphs 00030-00032 and Figures 1A, 1B, and 2. These amended limitations clarify that there is a relationship between the distance from the center axis A and the diameter and width of the

steam generator pipes, as well as the height of the funnel-shaped side walls. This allows for more uniform heating of the steam generation pipes even at low flow medium loads or during the startup process.

The cited art of Phelps fails to anticipate or make obvious this claim limitation where Phelps is directed at determining an appropriate pipe diameter relationship between the top and bottom areas of the combustion chamber rather than in relationship to the center axis A. Further, Phelps merely seeks to use the tube centerline spacing dimensions to ensure the tube spacing matches between the tubes in the upper furnace zone and the tubes in the lower furnace zone with no regard to the relationship between the tube diameter or width with respect to center axis A (centerline), see column 4, lines 1-4.

Conclusion

The claims have been amended and reconsideration and allowance in light of the amendments and remarks herein is respectfully requested. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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